

REMARKS

The specification has been amended to correct a typographical error. No new matter has been entered into the disclosure as a result of the present amendment.

Claims 7 and 17 have been amended. Claims 1-18 remain in the application. Reconsideration and allowance of these claims as presently presented is respectfully requested.

REJECTION OF CLAIMS UNDER 35 U.S.C. 102

Claims 1-5 stand rejected under 35 U.S.C. 102(b) as being anticipated by Anderson (U.S. 5,022,182). Anderson '182 generally discloses a package containing nutrients, which package may be positioned adjacent to the seed or seedling for subsequent release and uptake of the nutrients by the seed or seedling. The Examiner asserts that Anderson '182 discloses the controlled release of the contents within the package, as is presently claimed, However, Anderson '182 actually teaches away from such a controlled release at Column 7, line 65 - Column 8, line 6, wherein the receptacle 22 swells upon absorption of moisture until one or more seams holding receptacle 22 together bursts. Such a breach of at least one of the seams, as illustrated in Figure 6 of Anderson '182, represents an uncontrolled release of the contents from within receptacle 22.

In addition, nowhere does Anderson '182 teach or disclose a sealed porous pouch having pores which are specifically sized and configured to allow microorganisms to pass through the pores at a rate of no more than about 0.05 g/day/cm² in a stationary fluid environment, as is recited in the presently proposed claims. The specific release rate recited in the pending claims is particularly enabled and restricted thereto by the specific pore size and configuration of the present invention. Such specifically configured pores of the present invention permit only a restricted egress rate of the microorganisms stored within the container of the present invention. Nowhere are such specifically configured pores, nor the particular microorganism release rate, taught or disclosed in Anderson '182. As such, the claim rejections based thereon should accordingly be withdrawn.

Claims 7, 8, 10, and 16 stand rejected under 35 U.S.C. 102(b) as being anticipated by Hater et al. (U.S. 4,810,385). The Hater et al. '385 patent generally discloses a porous bag for releasing bacterial cultures into a waste stream. Nowhere, however, do Hater et al. teach or disclose specifically sized and configured pores in a porous container for controllably restricting the egress rate of material therethrough to no more than about

0.5 g/day/cm².in a stationary fluid environment, as is recited in the presently amended claims. Although the Examiner asserts that the device of Hater et al. '385 provides controlled release of the bacterial culture from the bag, applicant respectfully submits that no teaching or basis is found in Hater et al. '385 of the controlled microorganism release rate that is presently claimed. Therefore, the claim rejections based upon Hater et al. '385 should accordingly be withdrawn.

REJECTION OF CLAIMS UNDER 35 U.S.C. 103

Claims 11-15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Hater et al. '385 in view of Sasaki et al. (U.S. 4,630,634). The Sasaki et al. '634 patent generally discloses a solid chlorine dispenser, but nowhere teaches or suggests specifically sized and configured pores for controllably restricting the release rate of material within the container to no more than about 0.5 g/day/cm² when in a stationary fluid environment. As such, Sasaki et al. '634 fail to cure the defects of Hater et al. '385. Therefore, neither Hater et al. '385 nor Sasaki et al. '634, whether taken alone or in combination, teach or suggest the claims as presently amended. Accordingly, the claim rejections based thereon should be withdrawn.

Claims 1-4, 6, 17, and 18 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Hater et al. '385 in view of Michelson (U.S. 4,613,330). The Michelson '330 patent generally describes a delivery system for the delivery of a desired agent into a fluid environment. The semi-permeable container (10) of Michelson '330 includes a plurality of pores to allow fluid to pass into a cavity within the container. As stated in the abstract and at Column 8, lines 44-49 of Michelson '330, the pores of the container have a larger size to permit unimpeded passage of the agent through the pores. By contrast, the presently pending claims recite a container having specifically sized and configured pores to restrict passage of microorganisms to a controlled rate of no more than about 0.5 g/day/cm² in a stationary fluid environment. As such, Michelson '330 actually teaches away from the restrictive characteristic of the specifically size and configured pores of the presently claimed invention.

The Examiner points to Column 4, lines 20-23 for support in stating that Michelson '330 teaches the controlled release of microorganisms through a porous container by solely configuring the pore size, as is presently claimed. However, the passage at issue at Column 4, lines 20-23 is conjunctive, in that all elements stated

therein together determine the material release rate. In particular, the binding macromolecule of Michelson '330 is critical to the delivery rate of the desired agent, wherein the characteristics of the macromolecule form the limiting factors in the release rate, as opposed to the container pore size acting as such a limiter. Such a relationship is set forth at Column 7, lines 8-10 and at Column 4, lines 13-19, wherein the pore size of the container is selected depending on the molecular weight and configuration of the macromolecule, and that the controlled release of Michelson '330 is obtained by a predetermined rate of macromolecule dissolution within the container, and not by a limiting pore size. Therefore, there is no teaching in Michelson '330 of a selection of a particular pore size based on the size of the specific material employed, as is asserted by the Examiner on page 5 of the instant Office Action.

The present application and pending claims recite specifically sized and configured pores which themselves restrict the passage of material therethrough to a preselected controlled rate. The disclosure of Michelson '330 is therefore distinguished from the presently amended claims, in that the pores of Michelson '330 are larger than the size of the corresponding material so that the material can move unimpeded into or out of the container (Column 8,

lines 44-49).. Thus, there is no teaching in Michelson '330 of specific pore configurations which restrict passage of the corresponding material out from the porous container. Such a unique characteristic of the present invention is critical to the operational success thereof, in that raw microorganisms may be selectively contained within the porous container for controlled release into fluid environments, without the need for macromolecules or other release-inhibiting elements. Therefore, neither Hater et al. '385 nor Michelson '330, whether taken alone or in combination, teach or suggest the specifically sized and configured restrictive pores of the presently claimed invention. Accordingly, the claim rejections based thereon should be withdrawn.

Claims 5 and 9 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Hater et al. '385 in view of Michelson '330 and Anderson '182. As described above, Anderson '182 fails to cure the defects of Hater et al. '385 and Michelson '330, whether taken alone or in combination. Therefore, the claim rejections based thereon should accordingly be withdrawn.

For the foregoing reasons, the claims as presently amended are believed to be unobvious and patentable over the cited prior art, whether taken alone or in combination.

Applicant therefore submits that the claims as presently presented are allowable on the merits. An early allowance is respectfully solicited.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Please amend page 2, line 6 as follows:

Accordingly, it is a principle object of the present invention to provide a device for controllably releasing substances into fluid environments.

IN THE CLAIMS:

Please amend Claims 7 and 17 as follows:

7. A system for controllably releasing substances into fluid environments, comprising:

a) a dispensing vessel; and
b) a porous container disposed within said dispensing vessel, said porous container comprising porous material having pores which are sized and configured to allow said substances to pass through said pores at a controlled rate of no more than about 0.5 g/day/cm² when said porous container is exposed to a stationary fluid environment.

17. A method for culturing and controllably releasing microorganisms into fluid environments, comprising:

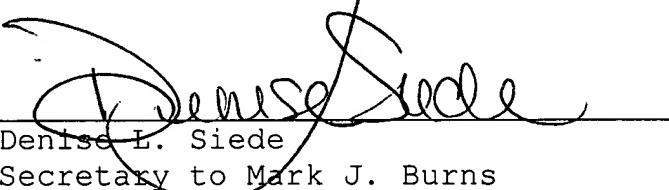
a) providing a porous container having microorganisms, nutrients, and a suspension fluid disposed therein, said porous container comprising material having pores which are sized and configured to allow said

microorganisms to pass through said pores at a rate of no more than 0.5 [0.01] g/day/cm² when said container is exposed to a stationary fluid environment; and

b) placing said container in an aqueous environment, thereby allowing said microorganisms to culture within said container and controllably release into said aqueous environment.

CERTIFICATE OF MAILING

I hereby certify that the foregoing Amendment together with a Transmittal Cover Letter for Serial No. 09/764175, Filed January 17, 2001, of inventor Michael VanErdewyk for the invention entitled "CONTROLLED RELEASE DISPENSER" are being deposited with the United States Postal Service as First Class mail, postage prepaid, in an envelope addressed to: Box DAC, The Commissioner of Patents and Trademarks, Washington, D.C. 20231, on this 5th day of January, 2003.



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Date of Signature: Jan. 6, 2003